

# Unit One: Energy

## Lesson (1): Light

### A. Complete the following statements:

- 1) .....is a form of energy that can be seen and it's called.....
- 2) Light rays never travels in .....lines.
- 3) 2. Light reflects when it falls on.....surface
- 4) .....and.....are from the properties of light.
- 5) .....phenomena occurs when light passes through drops of rain
- 6) The object image that is formed through narrow holes is ..... and .....
- 7) The nearer object to the light source has the .....shadow.
- 8) We can see objects around us when ..... fall on them, then it ..... to reach our eyes
- 9) Light can easily transmit through.....and ..... materials.
- 10) .....materials allow some light to pass through, but ..... materials don't allow light to pass through.
- 11) Cartoon and .....are examples of .....materials.

- 12) The presence of ..... and ..... are from the necessary factors for light reflection.
- 13) ..... is from evidence of traveling light in straight lines.
- 14) ..... and ..... are types of the light reflection.
- 15) ..... is the reflection of light on a rough reflecting surface.
- 16) Light ..... when it falls on a mirror ,while it ..... when it passes from water to air.
- 17) When a light ray passes from glass to air it .....
- 18) If you stand at 50 cm in front of a plane mirror, your image is formed at ..... cm from the mirror.
- 19) When the seven visible spectrum colors accumulate together ..... light is formed.
- 20) ..... is the dark area form behind opaque body
- 21) Light bouncing when it falls on an object is called.....
- 22) ..... is phenomenon produced by the separation of light into seven spectrums during raining.
- 23) In the seven spectrum colour, the ..... colour lies between the red colour and the yellow colour.

- 24) Sun light separated into .....colours by passing it through a .....  
 25) Light reflects regularly when it falls on .....  
 26) When light pass between two transparent medium it changes its ..... & ..... so it .....

**B. Put (✓) or (✗) and correct the wrong one:**

- 1) The formation of shadow indicates that light travels in curved lines. ( )
- 2) Semi-transparent materials let most light to pass through and we can see objects clearly through them. ( )
- 3) The amount of light that's transmitted through tissue paper is more than the light transmitted through a glass window. ( )
- 4) A spoon appears broken when it is placed in a cup of water due to the reflection of light. ( )
- 5) Green light can be analyzed into seven spectrum colours. ( )
- 6) When the sunlight passes through the drops of rainwater, rainbow is formed. ( )
- 7) An inverted image is formed when light pass through wide holes. ( )

### C. Write the scientific

- 1) The materials which you can see objects behind them clearly and in full details. [.....]
- 2) It is the light energy that can be seen. [.....]
- 3) The materials which allow some light to pass through and we can see objects through it less clearly. [.....]
- 4) The materials that form a clear shadow with a sharp edge when light fall on them. [.....]
- 5) The reflection of light on a piece of white paper in different directions. [.....]
- 6) Red, orange, yellow, green, blue, indigo and violet. [.....]
- 7) A structure used to separate the white light into seven spectrum colours. [.....]
- 8) Seven colours are produced as a result of splitting the white light.  
[.....]
- 9) A phenomenon occurs in the sky after raining in a sunny day.  
[.....]
- 10) The materials that from faint shadow when light falls on them.  
[.....]
- 11) The main source of light on Earth. [.....]

- 12) The reflection of light rays when they fall on white paper.

[ ..... ]



**D. Give reason for:**

1) The formation of an inverted image through narrow holes

.....

2) A clear glass is a transparent material.

.....

3) Shadow of an opaque body is formed when light falls on it.

.....

4) The pencil appears broken in a cup of water.

.....

5) You can see your image in a plane mirror.

.....

6) Seeing the pen bending in a transparent cup of water.

.....

7) The formation of light spectrum.

.....

8) The rainbow appears in the sky after rainfall.

.....

9) A light beam changes its direction when it passes from air to water.

### E. Compare between:

#### 1. Transparent , semi-transparent and opaque materials

| P.O.C                    | transparent | Semi-transparent | opaque |
|--------------------------|-------------|------------------|--------|
| Transmitting<br>of light |             |                  |        |
| Seeing object<br>behind  |             |                  |        |
| example                  |             |                  |        |

#### 2. Regular and irregular reflection

| P.O.C      | Regular reflection | irregular reflection |
|------------|--------------------|----------------------|
| Definition |                    |                      |
| example    |                    |                      |

Lesson (2): Seeing coloured objectsA) Complete the following statements:

1) If the seven spectrum colours are mixed together, they produce .....

2) The transparent colored body seems with the same color of ..... light

3) When the white light strikes a transparent green object, it absorbs ..... and allows ..... to pass through.

4) The transparent colored objects have the same colour of the .....

5) When a white light falls on a transparent red bottle, the bottle absorbs ..... and permits the ..... to pass through.

6) When a white light falls on a yellow translucent plate, the plate absorbs all the light colors except .....

7) All the light are ..... when they fall on a white opaque body.

8) If the red light strikes a white ball, it looks in ..... colour

9) The white board ..... all the light colours , while the black board ..... all the light colours.

10) We prefer to wear ..... clothes in summer and ..... clothes in winter.

- 11) .....reflects its own light only , while .....  
allows its own colours only to pass through.
- 12) .....absorb all light colours , while .....absorb all  
the light colours and reflects its own colour only.
- 13) The red dress seems red when you look at it through ..... or  
..... glass sheet and seems .....when you look at it through  
a blue glass sheet.
- 14) When you look at a red apple through a yellow glass sheet, it seems  
.....
- 15) .....and .....are the primary  
coloured lights.
- 16) .....and .....are the secondary  
coloured lights.
- 17) Mixing .....and .....lights give yellow light.
- 18) Mixing red, blue and green lights gives .....light.
- 19) Mixing .....and .....lights produce magenta light.
- 20) Mixing red and green lights gives .....light.
- 21) ..... are colored light that are produced by mixing two of  
primary colors while ..... is produced by mixing all primary  
colors

**B) Put (✓) or (✗), then correct it :**

- 1) When white light strikes a red flower, it reflects the white colour.  
    ( )
- 2) We see the coloured transparent body with the same colour,  
    because it reflects all the light colours. ( )
- 3) The black t-shirt reflects all the light colours. ( )
- 4) The red table reflects all the light colours. ( )
- 5) Mixing yellow, green and blue lights gives the white colours. ( )
- 6) Mixing red and green colours dyes give the same colour as mixing  
    red and green colours light. ( )
- 7) When you look at a black body through a glass plate, the body and  
    the plate seems black. ( )
- 8) We must wear black or dark clothes in winter. ( )

**C) Write the scientific term:**

- 1) The light that is impossible to be produced mixing two of other  
    coloured lights. [.....]
- 2) The objects that reflect all the light colours when the white  
    light falls on them. [.....]
- 3) The objects that absorb all light colours when the white light  
    falls on them. [.....]

4) The object that absorbs all the light colours and reflects its own colour only. [.....]

5) A light that is produced by mixing red, green and blue.  
[.....]

6) Coloured lights that are mixed together to produce cyan light.  
[.....]

**D) Give reason for:**

1) A banana fruit seems yellow when sunlight falls on it.

.....

2) The red transparent ruler appears red when white light falls on it.

.....

3) We see the white paper as it is.

.....

4) If a white light strikes a transparent blue glass sheet; the blue light only transmits through it.

.....

5) The chalk appears white, while the broad appears black.

.....

6) Red, green and blue are called primary coloured lights.

.....

7) Magenta is called a secondary coloured light.

8) The yellow banana seems black when you look at it through a green glass sheet.

E) Compare between primary light colors and secondary light colors:

| P.O.C.     | primary light | secondary light |
|------------|---------------|-----------------|
| definition |               |                 |
| Example    |               |                 |

الكلمات المأكولة في البحث وانضم لمجموعات ذاكرة المأكولات رياض الأطفال لصف الثالث الاعدادي

Lesson (3): MagnetismA) Complete the following statement:

1. The two types of magnet are .....and .....
2. The like magnetic poles ..... each other, while the dislike magnetic pole..... each other
3. The natural magnet is one of the .....ores which is known by.....
4. Aluminium, chalk and wood are ....., while nickel and cobalt are .....
5. A freely suspended magnet always takes .....direction.
6. The compass is used to identify the .....
7. The magnetic needle should be ..... And .....
8. .....and.....are from the shapes of the artificial magnet.
9. Magnetism is concentrated at the....., while it disappears in the .....of magnet.
10. Magnetic force is ..... force.
11. ..... Magnet is a magnet made by man from .....or .....
12. Each magnet has ..... ends called .....

13. The natural magnet was discovered more than.....
14. .....is the magnet ability to attract the magnetic materials existed in its field.
15. The materials that attract to the magnet are called .....
16. Matter can be divided into ..... and ..... due to their magnetic abilities.
17. The English scientist ..... made a magnetized needle which is used nowadays in making .....

### B. Write the scientific term:

- 1) A black rock of iron ores known as magnetite. [.....]
- 2) The space around the magnet where the magnetic forces appear. [.....]
- 3) The ability of the magnet to attract the magnetic materials existed in its field. [.....]
- 4) A set used to locate the four main geographical directions. [.....]
- 5) The materials that are attracted to the magnet [.....]

6) A region on the magnet has the most powerful force of attraction [.....]

7) A region around the magnet at which that effect of the magnetism appear [.....]

8) The materials that don't get attracted to the magnet [.....].

9) The pole of the magnet which points to the north direction of the earth. [.....]

### C) Give reason for:

1) Some materials called non-magnetic material.

.....

2) One of the poles of the magnet called North Pole and the other the South Pole.

.....

3) The north pole of the magnet attracts the south pole of another magnet, but it repels the North Pole.

.....

4) When you sprinkle iron filings on a glass plate placed on a magnet then you knock on the glass, the iron filings assembled at the two ends.

5) The compass used to locate the main four geographical directions.

6) Iron nails are attracted to the magnet.

**D) Put (✓) or ( X) and correct the wrong one:**

1. There are different shapes of natural magnet. (.....)
2. Materials that are attracted to magnet are called magnetic materials.(.....)
3. Irons, cobalt and copper are magnetic materials. ( )
4. Glass, nickel and wood are non- magnetic materials. ( )
5. The freely suspended magnet always takes a fixed direction. (.....)
6. Magnetism decreases as we go far from the two poles towards the middle. ( )
7. When the north pole of a magnet get near to the north pole of another magnet, the two poles attract each other. ( )

8. The magnetic field is the ability of the magnet to attract the magnetic materials existed in its field. (.....)

**E) Compare between magnetic materials and nonmagnetic materials**

| P.O.C             | <u>magnetic materials</u> | <u>nonmagnetic materials</u> |
|-------------------|---------------------------|------------------------------|
| <u>definition</u> |                           |                              |
| <u>Example</u>    |                           |                              |

Lesson (4)Magnetism and electricityA) Complete the following statement:

1) The magnet which made by the effect of electricity called .....

2) The electromagnet loses its magnetic force by .....

3) ..... and ..... are examples of devices that contain Electromagnet.

4) ..... is the scientist who discovered how to make the dynamo.

5) The magnet has ..... effect

6) A huge electric generator consists of ..... that turn between the two poles of .....

7) The electromagnet convert the ..... energy into ..... energy, while the dynamo convert ..... energy into ..... energy.

8) Generating a magnetic field by using the electric current is the idea of making .....

9) The ways to increase the amount of electricity produced by the dynamo are ..... and .....

- 10) The dynamo fixed in the bicycle touching the bicycle .....
- 11) The coil of the dynamo made of .....
- 12) A huge electric generator is used in .....station.
- 13) The magnetic force of the electromagnet increase by .....the intensity of ..... passing through the coil.
- 14) The wire winding on the electromagnet made up of .....  
.....
- 15) Electromagnet consist of .....and  
.....
- 16) Electric current has ..... effect.

### B. Write the scientific term:

1. A device used to change the electric energy into magnetic energy. [.....]
2. A device used to detect the magnetic effect of the electric energy. [.....]
3. The magnet that made by the effect of the electric current.  
[.....]
4. A scientist who discovered that the magnetic energy could change to electric energy. [.....]

5. A set used to lighten the bicycle lamps. [.....]
6. An instrument used in the electric power stations.  
[.....]
7. An instrument used in the electric winches and electric bells.  
[.....]
8. A device used to measure the electric current intensity.  
[.....]
9. A metal used in making the electromagnet. [.....]

**B) Give reason for:**

- 1) The electromagnet is a necessary device.  
.....
- 2) When an electric current flows through a wire that is put beside a Compass, the compass needle deflects.  
.....
- 3) In the electromagnet, we must increase the number of batteries  
.....
- 4) The small cylinder in the bicycle's dynamo touches the bicycle's wheel tire.  
.....

5) The huge electric generator is used in electric power stations

C) Put (✓) or ( X) and correct the wrong one:

1. The electric current has a magnetic effect. ( )
2. The electromagnet changes the electric energy to mechanical energy. ( )
3. Electromagnet used for making electric bells, electric winches and cranes. ( )
4. When an electric current passes through a wire coiled around a wrought iron bar , the wrought iron bar becomes a permanent magnet. ( )
5. William Gilbert is the scientist who discovered that the magnetic energy could change into electric energy. ( )
6. Electric current can be generated from magnetism, but magnetism can't be produced from electric current. ( )
7. Dynamo changes the electric energy into kinetic energy ( )

**Unit (2)****Lesson (1): Mixtures**

Complete the following statements:

- 1-Substance that made of only identical particles is called .....
- 2- .....consists of more than one type of particles.
- 3-Milk and concrete are examples of .....,While distilled water and baking soda are examples of .....
- 4-Air and mineral water are examples of .....
- 5- ..... and ..... are from the types of mixtures
- 6-vinegar and water is ..... mixture, while sand and water is ..... mixture
- 7- Both sea water and mineral water are ..... because each of them consists .....
- 8-Each component in the ..... keeps its own properties
- 9-Mixtures can be formed by ..... and .....
- 10-A mixture of salt and pepper can be formed by ..... or .....
- 11-Components of a mixture can be separated by ....., and .....
- 12-Iron fillings and sand can be separated by using .....
- 13- ..... process is used to separate sand and water.
- 14- ..... process is used to separate a salt from its solution.
- 15- ..... is used to separate water -oil mixture.
- 16-To separate insoluble solid like sand from salty solution , we use ..... process.

**2) Put (J) or (X), then correct it:**

- 1-Sugar and baking soda are mixtures. ( )
- 2-A mixture is made of only one type of identical particles. ( )
- 3-You can see the different components of the salty water. ( )
- 4-Mixtures are formed by magnetic attraction, filtration and evaporation. ( )
- 5-Solid -liquid mixture is separated by a separating funnel. ( )
- 6-Sand and water mixture is separated by evaporation process. ( )
- 7-A mixture of any solid and iron filings can be separated by using a strong magnet. ( )
- 8-Sugary solution can be formed by shaking or stirring. ( )
- 9-A mixture of mango and banana juices is formed by stirring or shaking. ( )
- 10-Vegetables soup is considered as a mixture. ( )
- 11-The properties of mixture are the same properties of its components. ( )
- 12-The separating funnel is used to separate a solid-liquid mixture. ( )
- 13-We can separate a mixture of oil and water by filtration. ( )
- 14-A mixture of rice and iron nails can be separated by using a magnet. ( )
- 15-Salty solution can be separated by evaporation. ( )
- 16-We obtain table salt from seas and oceans by evaporation process. ( )

**3) Write the scientific term:**

1-Substance in which,their components can be separated easily.

[.....]

2-A mixture of oxygen,nitrogen,carbon dioxide and water vapour.

[.....]

3-A method used to separate a soluble solid material from water.

[.....]

4-A method used to separate magnetic substances from any solid mixture. [.....]

5-A type of mixture in which, we cannot distinguish between its components. [.....]

6-A type of mixture in which , we can distinguish between its components. [.....]

7-A method used to mix solid-solid mixture. [.....]

8-A mixture formed by dissolving sugar in milk. [.....]

9-A type of matter that its components keep their own properties.

[.....]

10-A method used to separate a substance that is insoluble in water.

[.....]

11-A set used to separate a mixture water and oil. [.....]

12-A method used to form a mixture of salt and pepper.

[.....]

**4) Give reason for:**

1-Mineral water considered as a mixture.

2-Table salt is collected from sea water.

3-A magnet can be used to separate iron fillings from sand.

4-A mixture of sand in water is different from a mixture of sugar in water.

5-Distilled water and baking soda are pure substance.

**How can you separate the following?**

1-A mixture of sand, water and sugar.

2-A mixture of oil and rice.

3-A mixture of iron nails, sugar and rice.

4-A mixture of oil and water.

5- A mixture of salt in water.

Lesson (2): Solutions

Complete the following statement:

- 1- Mixture are classified into two types .....and.....
- 2- .....is a type of mixture that its components cannot be distinguish
- 3-Heterogeneous liquid mixture is called a .....
- 4-The components of .....can be distinguished, while the components of ..... can't be
- 5-The solution consists of .....and ..... Which are mixed by ..... Process
- 6-..... and .....are heterogeneous liquid mixture
- 7- Homogenous liquid mixtures are called..... , while heterogeneous liquid mixtures are called .....
- 8-The substance which dissolves in a liquid is called.....
- 9-The substance the solute dissolves is called.....
- 10 -In sugary solution , sugar is the ....., while water is the.....
- 11-When a substance doesn't dissolve in a certain solvent a .....is formed
- 12-Solubility process is affected by ..... , ..... ,.....and .....
- 13-Decreasing .....increase the solubility time
- 14- The time required to dissolve the same quantity of salt in cold water is ..... than the hot one .
- 15-The quantity of .....and..... affects the solubility process

16-Increasing the quantity of solvent.....the solubility time

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**2) Put ( ✓ ) or ( X ):**

1. Solution is heterogeneous mixture. ( )
  - 2- The substances that its components cannot distinguish are suspension. ( )
  - 3-Any solution is composed of a solvent and a material dissolved in it ( )
  4. Lemon juice and mud in water considered as suspensions. ( )
  - 5-Solubility does not depend on the amount of the solute and the solvent.
  6. In case of sugary solution, sugar is the solute. ( )
  - 7-The heterogeneous mixture can be separate by using a strong magnet. ( )
  8. Water considered as the common solvent for many solutes. ( )
  9. As the temperature increase, the solubility time increases. ( )
  10. Increasing the quantity of solvent when using the same amount of solute leads to increase in the solubility time. ( )
  11. Shaking leads to decrease the solubility time. ( )
-

## 3) Write the scientific term:

1-The mixture of insoluble solid substance in water.

[.....]

2-The liquid that used to dissolve the solid substance.

[.....]

3-A process by which the solute disappear in the solvent forming a solution. [.....]

4-The mixture that composed of a solute and a solvent.

[.....]

5- The mixture that its component cannot be distinguished.

[.....]

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## 4) Give reason for:

1-The solubility time of sugar differs than that of sodium chloride.

.....

2-The solubility time is affected by temperature and stirring.

.....

3-It is better to dissolve 10 gm of sugar in 20 ml of water than dissolving it in 5 ml of water.

.....

4-Water is a common solvent.

.....

5. We can easily separate sand from water.

Unit (3): Environmental balanceLesson (1): Food relationships among living organismsComplete the following statement:

1. Green plants make photosynthesis process by using ..... In the presence of .....as a source of energy.
2. In predation, the animal that devours another one is called ..... while the devoured animal is known as.....
3. ..... Is a temporary relationship that ends up by devouring the prey.
4. Predation is less common in.....world than in ....world
5. .....plants have to prey some insects to get their needed elements for making .....substances
6. .....and .....are from the ways of self-defense against predation in living organisms
7. During .....phenomenon, the living organisms changes its colour to simulate its surrounding environment
8. Bees which look like wasps undergo .....phenomenon ,while chameleon undergoes .....phenomenon to protect themselves against enemies
9. The food relationship between nodular bacteria and leguminous plants is known as ..... Where it provides leguminous plant with ..... and nodular bacteria benefit .....from it
10. There is a .....food relationship between crocodiles and some birds.

11. In saprophytic relationship, the saprophytes get their food by decomposing .....and .....
12. In parasitism relationship, the death of the ..... is considered a loss to the.....
13. In the external parasitism , the parasite suck the .....and also convey .....to it
14. In internal parasitism, the parasites share the hosts .....or feed on their.....
15. Fleas can convey .....disease to man , while Ascaris worm causes .....to him

Write the scientific term:

- 1-The plants that devour small insects.  
[.....]
- 2- The phenomenon that the living organism makes it to protect itself from enemies by changing its colour to simulate its surrounding environment. [.....]
- 3- The food relationship between insects as bees and the flowers of plants. [.....]
- 4- The harmed organism in parasitism relationship.  
[.....]
- 5- The worm which infects man with elephantiasis disease.  
[.....]
- 6-A disease caused by parasitic ascaris worm.  
[.....]

Mention the kind of food relation ship between each of the following:

1. Lion and deer. [.....]
2. Halophila plant and insects. [.....]
3. Jawless lamprey and fish. [.....]
4. Lice and man. [.....]
5. Crocodiles and some birds. [.....]
6. Hippopotamus and some birds. [.....]
7. Fungi and dead organisms. [.....]
8. Nodular bacteria and bean plants. [.....]

Give reason for:

- 1- Predation is less common in plant than in animal.
- 2-Some plants are called insectivorous plants.
- 3-Some animals have the ability to camouflage.
- 4- There is a mutualism between nodular bacteria and leguminous plants.
- 5-Saprophytic organisms are decomposers.
- 6- Parasitism relationship differs from the predation relationship.

Put ( ✓ ) or ( ✗ ):

1. The commensalism relationship ends by killing one organisms or devouring a part of it ( )
2. Predation is a permanent relationship ( )
3. In parasitism, animals get their food by attacking , killing and devouring other living organisms ( )
4. In mimicry relationship , the living organisms protect themselves by changing their colour to simulate the colour of the surrounding environment ( )
5. In camouflage, harmless living organisms imitate other harmful or poisonous living organisms to frighten their enemies ( )
6. Fleas conveys small pox disease to man ( )
7. In parasitism, the organism that is harmed is known as the host. ( )

**لا تنس الالشتراع في  
قواعد ذاكرولي  
على نطبيق البرام**

**تابع جدد ذاكرولي على  
فيسبوك  
نوبلز  
وائل من اب  
لبيجرام**

Lesson (2): Environmental balanceComplete the following statements:

- 1-An ecosystem is any natural ..... area including ..... and .....
- 2-The balance between the components of the ecosystem is called.....
- 3-.....is a food relationship that organizes the numbers of preys.
- 4-The components of ecosystem are ..... and .....
- 5-Man interference as ..... and ..... leads to .....
- 6-The balance between the components of the ecosystem is called .....
- 7-The disturbance happens in the ecosystem produced as a result of ..... and .....
- 8-.....and..... are from the factors that harm the environmental balance.
- 9-In ancient eras, the changing in natural conditions cause the extinction of .....
- 10-Predators help preys in getting rid of ..... or ..... members.
- 11-The disappearance of predators in an ecosystem causes the increase of ..... and ..... become insufficient.
- 12-.....and..... are relationships that keep the environmental balance.
- 13-.....organisms help the environment to get rid of dead organisms and help in ..... the chemical elements found in dead organisms.

14-The chemical elements as ..... and phosphorus back to the environment with the help of .....

**Write the scientific term:**

1-The balance among the components of the ecosystem.  
[.....]

2-The phenomenon that appears among preys populations due to the storage of food in the ecosystem. [.....]

3-A huge ecosystem. [.....]

4-The phenomenon that had occurred to some animals in ancient eras.  
[.....]

5-Natural area, which includes non-living things and living organisms.  
[.....]

**4) Put (J) or (X):**

1-Ecosystem is an artificial area including living organisms and non-living things. ( )

2-Any disturbance in the ecosystem will lead to environmental balance ( )

3-If saprophytic living organisms were extinct; earth surface would cover with dead bodies. ( )

4-Predation helps in environmental imbalance. ( )

5-Interaction among the environmental components keeps the balance within the ecosystem. ( )

6-The ecosystem may be very large as the ocean. ( )

7-When food resource in the ecosystem become insufficient, mutualism appears among preys population. ( )

8-Saprophytic organisms are responsible of recycling chemical elements found in dead bodies. ( )

Give reason for:

- 1- The change of natural condition causes an environmental imbalance.
  
  
  
  
- 2- Predation is useful to environmental balance.
  
  
  
  
- 3- Competition may appear among prey's population in the ecosystem.
  
  
  
  
- 4- The extinction of many animals as dinosaurs.

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نه رياضه الاطفال للصف الثالث الاعدادى**



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# Worksheet 1

## Q1: Write the scientific

1. The ability to do work.

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2. An energy form which can be seen.

---

3. The main source of light on the earth's surface

---

4. The light energy that can be seen.

---

5. The sun, moon & lightened lamps.

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## Q2: Correct the underlined words.

1. The moon is the main source of light on the earth's surface.

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## Q3 Complete:

1. Energy is the ability to \_\_\_\_\_

2. From the energy forms \_\_\_\_\_, \_\_\_\_\_

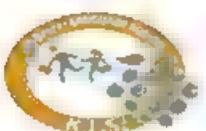
3. The energy form which can be seen is called the \_\_\_\_\_

4. The \_\_\_\_\_ is the main source of energy on earth's surface while the \_\_\_\_\_ is the reflection of the sunlight that falls on its surface.

5. From the sources of light \_\_\_\_\_, \_\_\_\_\_ & \_\_\_\_\_

## Q4. Give reasons

1. Although the moon is a dark body, it looks bright.



# Worksheet 2

## Q1: Write the scientific

1. The darkened area which is formed as a result of light falling on an opaque object. \_\_\_\_\_
2. The material which things can be less clearly seen behind than the transparent one. \_\_\_\_\_
3. The material which doesn't allow the light to travel through them& things behind can't be seen. \_\_\_\_\_
4. The material which things can be clearly seen behind. \_\_\_\_\_

## Q2: Correct the underlined words.

1. Light travels in curved lines. \_\_\_\_\_
2. The image formed through the narrow holes is erected & magnified. \_\_\_\_\_
3. The nearer the object to the light source is the smaller the object shadow becomes. \_\_\_\_\_
4. The translucent material doesn't allow the light to travel through them& things behind can't be seen. \_\_\_\_\_

## Q3 Complete:

1. Light travels in \_\_\_\_\_ lines.
2. The image formed through narrow holes in cameras is \_\_\_\_\_ & \_\_\_\_\_
3. A shadow is formed because light \_\_\_\_\_
4. Materials can be classified according to the amount of light that transmit through them into \_\_\_\_\_, \_\_\_\_\_ & \_\_\_\_\_
5. The \_\_\_\_\_ is the material in which things can be clearly seen behind.

## Q4. Give reasons

1. A shadow is formed.
- 

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# Worksheet 3

## Q1: Write the scientific

1. The returning back (bouncing) of light when it falls on a plane mirror.  
\_\_\_\_\_
2. The changing of the direction of light ray when it passes through two different transparent media.  
\_\_\_\_\_
3. A group of seven colors appears in the air forming a rainbow colors.  
\_\_\_\_\_

## Q2: Correct the underlined words.

1. When light falls on the mirror it will be reflected back& this is called Irregular reflection.  
\_\_\_\_\_
2. When light falls on the paper's surface, it reflects & scatters light in different directions& this is called regular reflection.  
\_\_\_\_\_
3. The returning back (bouncing) of light when it falls on a plane mirror is called light refraction.  
\_\_\_\_\_
4. The reflection of light is the changing of the direction of light ray when it passes through two different medium.  
\_\_\_\_\_
5. The visible spectrum consists of six colors.  
\_\_\_\_\_

**Q3 Complete:**

1. The seven spectrum colors are \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, & \_\_\_\_\_



**Q4. Give reasons**

1. When you look at the mirror, you can see your image.

\_\_\_\_\_

2. When you put a pencil in a beaker of water, it looks broken.

\_\_\_\_\_

3. Light refracts when it passes in two different media.

\_\_\_\_\_

4. The formation of the rainbow colors in the sky after rainfall.

\_\_\_\_\_

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# Worksheet 4

## Q1: Write the scientific

1. The objects which have the same colors as light transmits through them. \_\_\_\_\_
  
2. The objects have the same color of light they reflect. \_\_\_\_\_
  
3. The seven colors of the white light which sunlight is made up of. \_\_\_\_\_
  
4. The colors we get by mixing two colors of the primary colored light. \_\_\_\_\_
  
5. The objects which absorb all the lights and don't reflect any light. \_\_\_\_\_
  
6. The objects which reflect all the colors of the white light. \_\_\_\_\_

## Q2 Complete:

1. The prism separates sunlight into \_\_\_\_\_
  
2. Transparent colored objects have the same color of light which \_\_\_\_\_ through them.
  
3. The opaque colored objects seem having the same color of light which \_\_\_\_\_
  
4. If red light strikes a white ball, it looks \_\_\_\_\_ in color.
  
5. Red light + Green light + Blue light = \_\_\_\_\_

**Q3: Correct the underlined words.**

1. When the white light strikes a red rose, it reflects the white color.

2. An object seems white since it absorbs all the colors which the white light is made up of.

3. If you look at a yellow banana through a green glass sheet, it seems yellow.

4. Red, green and blue are secondary light colors.

5. Red, green and magenta are primary light colors.

6. By mixing blue and green we get yellow light color.

7. By mixing blue and Red we get Cyan light color

8. Magenta (purple), Yellow and cyan (light blue) are called Primary colors.

9. The white light consists of six spectrum colors.



# Worksheet 5



## The Magnet

### 01: Write the scientific

1. The black rock which has a natural force to attract the materials made of iron. \_\_\_\_\_
  
2. The materials that are attracted to the magnet. \_\_\_\_\_
  
3. The materials that are not attracted to the magnet. \_\_\_\_\_
  
4. The area of the magnet which attracts a greater number of paper clips. \_\_\_\_\_
  
5. A material gets attracted to the magnet. \_\_\_\_\_
  
6. The pole that always refers to the north direction. \_\_\_\_\_
  
7. The pole that always refers to the south direction. \_\_\_\_\_
  
8. The space around the magnet in which the effect of magnetic force appears. \_\_\_\_\_
  
9. The magnet ability to attract the magnetic existed in its field. \_\_\_\_\_
  
10. The area of the magnet which attracts the greatest number of metal clips. \_\_\_\_\_
  
11. A set which is used for locating the four main geographic directions. \_\_\_\_\_

**Q2 Complete:**

1. The natural magnet is one of the iron ores which is Known as \_\_\_\_\_
2. The different shapes of the man-made magnet are \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ & \_\_\_\_\_
3. The materials that are attracted to the magnet are called \_\_\_\_\_
4. \_\_\_\_\_ & \_\_\_\_\_ are magnetic substances while \_\_\_\_\_ & \_\_\_\_\_ are non-magnetic substances.
5. The like magnetic poles \_\_\_\_\_ each other While the dislike magnetic poles \_\_\_\_\_ each other.
6. Each magnet has \_\_\_\_\_ poles.
7. The greatest magnetic force of a magnet occurs at its \_\_\_\_\_
8. The \_\_\_\_\_ is used to identify the four geographic directions.



**Q3. Give reasons**

- 1. Wood and glass are non-magnetic substances.**

---

- 2. Paper clips and pins are magnetic substances.**

---


**O4 Classify the following:**

Wood – pins – glass – Chalk – paper clips – Nails – Copper.

| Magnetic substances | Non-magnetic substances |
|---------------------|-------------------------|
|                     |                         |
|                     |                         |
|                     |                         |
|                     |                         |
|                     |                         |



**Q5: Correct the underlined words.**

1. The man-made magnet is called Magnetite.

---

2. A magnet attracts all the substances.

---

3. Like poles attracts and dislike poles repel.

---

4. Each magnet has 3 poles.

---

5. The horse shoe magnet is a natural magnet.

---

6. The greatest magnetic force of a magnet occurs at its middle.

---

7. The freely hanged magnet takes the West and east directions.

---





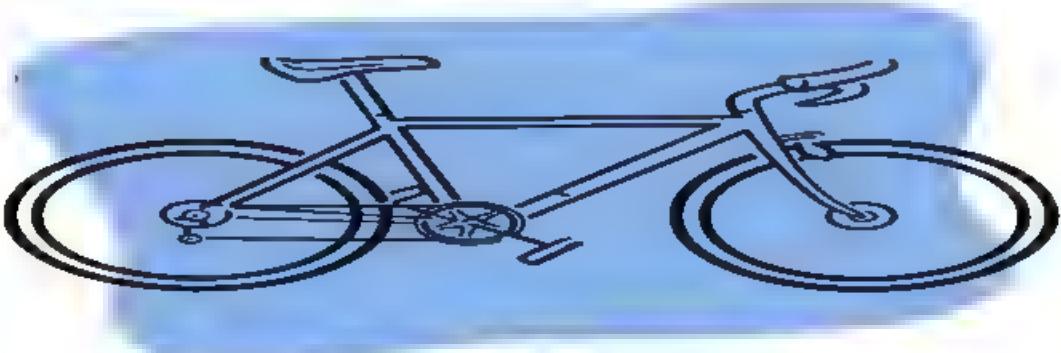
# Worksheet 6

## Q1 Complete:

1. The basic idea of the electric generators is the changing of \_\_\_\_\_ into \_\_\_\_\_
  
2. When you move a coil between 2 poles of the magnet, \_\_\_\_\_ is generated in the coil.
  
3. The electromagnet is used in \_\_\_\_\_ & \_\_\_\_\_
  
4. The apparatus which converts the kinetic energy into electric energy is called the \_\_\_\_\_
  
5. The electromagnet changes \_\_\_\_\_ energy into \_\_\_\_\_ energy, while the dynamo changes \_\_\_\_\_ energy into \_\_\_\_\_ energy.
  
6. The huge electric generators are used in \_\_\_\_\_ & \_\_\_\_\_

## Q2 Choose the correct answer

1. The dynamo is fixed in the bicycle touches the bicycle  
(Seat – Pedal – Tire )
  
2. The coil of a dynamo is made up of \_\_\_\_\_ wire.  
( Copper – Carbon – Graphite )
  
3. The dynamo generates \_\_\_\_\_ energy from mechanical energy.  
( thermal – electric – light )
  
4. When you move a coil between 2 poles of the magnet,  
\_\_\_\_\_ is generated in the coil.  
( movement – magnet – electricity )
  
5. The \_\_\_\_\_ changes electric energy into magnetic energy.  
( electromagnet – electric motor – Dynamo)





# Worksheet 7

## Q1 Write the scientific term:

1. A mixture of gases such as oxygen, nitrogen, carbon dioxide & water vapour. \_\_\_\_\_
2. A method which is used to separate a mixture of Sand & iron fillings. \_\_\_\_\_
3. A mixture of minerals such as calcium, magnesium & water. \_\_\_\_\_
4. The materials which are made of only one type of Identical particles. \_\_\_\_\_
5. A substance which contains more than one type of particles. \_\_\_\_\_

## Q2 How can you separate the following mixtures

1. Sand solution. \_\_\_\_\_
2. Paper clips & flour. \_\_\_\_\_
3. water & oil solution. \_\_\_\_\_
4. Chalk & water solution. \_\_\_\_\_
5. Sugar solution. \_\_\_\_\_

**Q3 Complete:**

1. Mixtures can be mixed by \_\_\_\_\_, \_\_\_\_\_ & \_\_\_\_\_
2. Salt & pepper can be mixed by \_\_\_\_\_  
Or \_\_\_\_\_
3. salt & water can be mixed by \_\_\_\_\_  
or \_\_\_\_\_
4. Water & oil can be separated by \_\_\_\_\_
5. Dissolving carbon dioxide gas in a sugar solution is a type of \_\_\_\_\_ mixture.

**Q4 Suggest the mixture which can be separated by:**

1. Magnetic attraction  
\_\_\_\_\_ & \_\_\_\_\_
2. Filtration  
\_\_\_\_\_ & \_\_\_\_\_
3. Evaporation  
\_\_\_\_\_ & \_\_\_\_\_



# Worksheet 8

**Q1 What are the factors affecting dissolving?**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**Q2. Complete:**

1. Mixing a small amount of mud with water forming \_\_\_\_\_ solution that can be separated by \_\_\_\_\_
2. Increasing \_\_\_\_\_ reduces solubility time.
3. In our daily life we use different types of solvents called \_\_\_\_\_
4. \_\_\_\_\_ is considered to be a general solvent because of its ability of dissolving most materials.
5. Increasing temperature \_\_\_\_\_ solubility time.



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# Worksheet 9

## Q1 Write the scientific term:

1. The relationship between two organisms with a benefit to one and harm to the other. \_\_\_\_\_
2. The relationship between two organisms, one benefits while the other neither benefit nor harmed. \_\_\_\_\_
3. The relationship between two organisms that benefits from each other. \_\_\_\_\_
4. The plants which feed on tiny animals such as insects to get proteins. \_\_\_\_\_
5. A phenomena in which a living organism can change its color to stimulate the colors of the environment. \_\_\_\_\_
6. A phenomena in which the harmless living organisms imitate other harmful or poisonous living organisms to fear their enemies. \_\_\_\_\_
7. The parasitism which causes Elephantiasis diseases to man. \_\_\_\_\_
8. The parasitism which causes Malaria diseases to man . \_\_\_\_\_
9. The parasitism which causes small pox diseases to man. \_\_\_\_\_
10. The external parasitism which sucks the blood of the fish. \_\_\_\_\_

# Q2 Match:



|    | A            |   | B   |
|----|--------------|---|---|
| 1. | Predation    | a | A relationship between man& worms.          |
| 2. | Mutualism    | B | A relationship between insects& flowers.    |
| 3. | Symbiosis    | C | A relationship between Crocodile & birds.   |
| 4. | Saprophytism | D | A relationship between cats& rats.          |
| 5. | Parasitism   | E | A relationship between Fungi& food remains. |

Q3 Write the name of the parasite that causes the following diseases:

1. Elephantiasis:
2. Small pox:
3. Malaria:
4. Bilharziasis:

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Q4: Mention the kind of food relationship between:

1. A Snake& a bird:
2. Bees& flowers:
3. Mosquitoes& man:
4. Bilharzia& man:
5. Bread& the mold fungus:
6. Birds& Hippopotamus:
7. Birds& Crocodiles:

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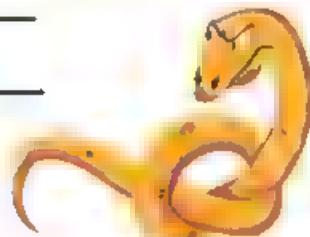
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# Worksheet 10

1. Write the scientific term:

1. A natural area including the living & the non-living things.

---

2. The balance among the components of the Ecosystem.

---

3. The organisms which work on decomposing the bodies of dead organisms.

---

4. The organisms which organize the numbers of prey's populations.

---

2. Choose the correct answer:

1. Which of the following is a very large ecosystem?

- a. A piece of land
- b. Water pond.
- c. The Ocean.

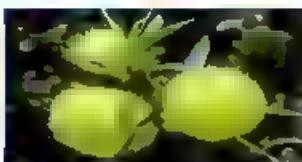
2. All of the following are living organisms of an ecosystem except:

- a. Fungi.
- b. Soil.
- c. Algae

# General Exercises

Give reasons:

- Some plants are known as insectivorous.



- A cuttlefish can hide from its enemies.

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- Some bees look like wasps in forming lines on their bodies.

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- A chameleon can hide from its enemies.

---



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- Bees and flowers get mutual benefits from each other.

---



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- Saprophytic organisms are called decomposers.

---



---

7. Lice, bugs & mosquitoes are external parasites.

---

---

8. Mosquitoes are very dangerous parasite.

---

---

9. Decomposers are considered the guards of nature.

---

---

10. Bilharzia worm & liver worm are internal parasites.

---

---

11. Flaria worm is very dangerous to human.

---

---



# Unit 1 (Energy)

## Lesson 1: light (Summary)

**The visible spectrum:** It is the light energy that can be seen.

**The Sun** is the main source of light on the Earth.

**Moon:** seems luminous as it reflects the sunlight falling on its surface.

**Sources of light** are the Sun, candles, kerosene lamps and electric lamps.

### **Properties of light:**

#### 1. Travelling of light in straight lines.

- A Formation of images through narrow holes (minimized and inverted).
- B Formation of Shadow (darkened area which is formed as a result of the falling of light on an opaque object)

#### 2. Transmitting of light through different materials.

- A Transparent materials: allow most light to pass through.
- B- Semi-transparent (translucent) materials: allow some light to pass through.
- C Opaque materials: don't allow light to pass through.

#### 3. Light reflection: It is the bouncing (returning back) of light rays when light falls on a reflecting surface.

**Regular light reflection:** It is the reflection of light when it falls on a smooth and shiny reflecting surface, where light rays are reflected directly in one direction.

#### 4. Light refraction: It is the change in the direction of light rays when light passes through a separating surface between two different transparent media, due to the change in the light speed. So, a spoon appears broken when you put it in a cup of water.

The light speed through air is faster than that through water.

#### 5. Light separation: It is the separation of white light into seven spectrum colours, by using a glass prism.

The drops of rain water that act as prism forming rainbow.

White light consists of seven spectrum colours which are: Red Orange Yellow Green Blue Indigo Violet.





# Unit 1 (Energy)

## Lesson 2: Seeing coloured objects (Summary)

Mixing the seven spectrum light colours produces white light.

### Seeing the coloured objects

#### 1) Seeing the coloured transparent and translucent objects:

- ✓ absorb all colours of light and permits its own colour only to pass through it.
- ✓ transparent and translucent objects are the same colour of the transmitted light through them.

#### 2) Seeing the coloured opaque objects.

- A) White objects: reflect all the light colours.
- B) Black objects: absorb all the light colours.
- C) Coloured objects: absorb all the light colours and reflect its own colour only.  
(colour of the coloured opaque object is the colour of the reflected light)

#### 3) Seeing the coloured opaque objects through coloured transparent objects:

- ✓ The opaque object is seen in its real colour when you look at it through a transparent object that has the same colour.

### Types of coloured lights

1- Primary coloured lights: cannot be produced by mixing two other coloured lights  
(Red Green – Blue)

2 Secondary coloured lights: can be produced by mixing two of the primary coloured lights.  
(Yellow Magenta – Cyan)

Mixing all the primary coloured lights produces white light.

# Unit 1 (Energy)

## Lesson 3: Magnetism (Summary)

### Types of magnet:

- (A) Natural magnet: a black rock (one of the iron ores called Magnetite).
- (B) Artificial magnet: made by man as Bar magnet, Horse shoe magnet, U shaped magnet, Needle magnet & Ring magnet.

Magnetic materials: are attracted to the magnet (Iron, nickel, steel and cobalt)

Non Magnetic materials: are not attracted (Chalk, glass, paper, aluminum, copper, wood)

### Properties of magnet:

#### 1 The magnet has two poles.

They are areas of magnet which have the most powerful force of attraction.

- North pole which always points to the north geographical direction.
- South pole which always points to the south geographical direction.

#### 2 The freely moving (suspended) magnet always takes a fixed direction, which is North South direction.

#### 3- The like (similar) magnetic poles repel each other, but the dislike (opposite) magnetic poles attract each other.

#### 4- The magnet is surrounded by an area called " Magnetic field ".

- Magnetic field: the space around the magnet in which the effect of magnetic force appears.
- Magnetic force: the ability of the magnet to attract the magnetic materials existed in its field.

### Magnetic Compass.

Structure: A light and small magnet (needle magnet) that can spin freely around a fixed axis.

Use: identify the main four geographical directions



# Unit 1 (Energy)

## Lesson 4: Magnetism and Electricity (Summary)

**Magnetism is always related to electricity.**

Electric current has a magnetic effect.

Electric current can be generated by using a magnet.

### **(1) Electromagnet:**

- ✓ Is made up of a copper wire twisted around a wrought (soft) iron and this wire is connected to a battery.
- ✓ When an electric current passes through a coil winding around a wrought (soft) iron bar, the iron bar becomes a temporary magnet that is called "the electromagnet".
- ✓ It converts electric energy into magnetic energy.
- ✓ By cutting the electric current, the electromagnet loses its magnetic force.
- ✓ It is used in making big sized winch (crane), electric bell, electric mixer, disc drive and television.

**The magnetic force of the electromagnet can be increased by:**

1. Increasing the number of coil turns.
2. Increasing the number of batteries (increasing the intensity of the electric current)

### **(2) Electric generator (dynamo):**

- ✓ English scientist Faraday discovered that kinetic energy can be changed into electric energy.
- ✓ Dynamo is made up of copper coil and a magnet.
- ✓ Converts mechanical (kinetic) energy into electric energy.
- ✓ The generation of the electric current in the coil increases by increasing the motion of the coil between the two poles of magnet.
- ✓ The examples of dynamo are:
  1. Small dynamo: is used to lighten the bicycle's bulb.
  2. Huge dynamo: is used in electric power stations to lighten cities and operate factories.

**Compass:** used to detect the magnetic force of the electromagnet.

**Ammeter:** used to detect the electric current of the dynamo.



## Unit 2 (Mixtures)

### Lesson 1: Mixtures (Summary)

#### Matter can be classified into:

- 1 Pure substance: It is the substance that is made of only one type of identical particles.

Examples: Distilled water sugar baking soda.

- 2- Mixture: It is the substance that consists of more than one type of particles.

Examples: Concrete - tomato sauce - mineral water - atmospheric air.

#### Types of mixtures:

- 1 Solid-solid mixture as fruit salad vegetable salad
- 2 Liquid-liquid mixture as a mixture of oil and water.
- 3 Solid-liquid mixture as a mixture of sand and water.
- 4 Gaseous-liquid mixture as soda water.
- 5 Gaseous-gaseous mixture as air.

#### Properties of mixture:

- 1- Its components don't react together and can be separated easily.
- 2- Each of its components keeps its properties.
- 3- Its components can be mixed at any ratio.

#### Mixture can be formed by:

- 1 Shaking: for mixing solid and liquid materials & liquid materials.
- 2 Stirring: for mixing solid and liquid materials & liquid materials.
- 3 Grinding: for mixing solid materials.

#### Components of mixtures can be easily separated by:

- 1- Magnetic attraction: used to separate solid mixtures that contain magnetic substances.  
Example: Mixture of sand and iron filings.
- 2- Filtration process: used to separate solid materials that are insoluble in water.  
Example: Mixture of sand and water.
- 3- Evaporation process: used to separate solid materials that are soluble in water.  
Example: Mixture of salty solution.
- 4- Separating funnel: used to separate immiscible liquid mixtures whose components don't mix together. Example: Mixture of oil and water.





## Unit 2 (Mixtures)

### Lesson 2: Solutions (Summary)

**Solution:** It is a mixture in which the solute breaks down into its most basic particles that spread throughout the solvent.

**A Solution consists of:**

- 1 **Solvent:** Is the substance in which solute disperses or dissolves as water, alcohol & benzene.
- 2- **Solute:** Is the substance which dissolves in a solvent as salt or sugar.

**Water** is a common solvent as thousands of substances dissolve in it.

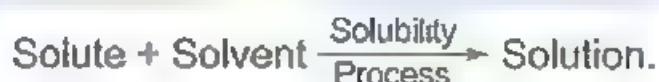
**Stirring process or Shaking process** are necessary to dissolve the solute in the solvent.

**Substances can be classified according to their solubility into:**

- 1 **A soluble substance:** a substance that dissolves in a solvent. as: Salt in salty solution.
- 2 **An insoluble substance:** substance that does not dissolve in a solvent. as: Mud in water.

**Solubility process:**

The process by which a solute dissolves in a solvent leading to the disappearance of the solute.



**Factors affecting the solubility of the components of the solution:**

- 1- Quantity of solvent
- 2- Temperature
- 3- Stirring or shaking
- 4- The kind of the solute
- 5- Grinding the solid materials.

## Unit 3 (Environmental balance)

### Lesson 1: Food relationships among living organisms (Summary)

**Food is the main source of energy for all living organisms, where:**

1. Producers – autotrophic organisms: Green plants.
2. Herbivores (plant eaters): depend directly on plants as sheep & rabbit
3. Carnivores (animal eaters): depend indirectly on plants as lion & snake.

**There are three types of food relationships between living organisms:**

1. Predation.
2. Symbiosis.
3. Saprophytism.

#### **1. Predation:**

- ✓ A food relationship among living organisms, where one living devours another one.

Predator: The living organism which devours the other living organism.

Prey: The devoured animal.

Predation is less common in plant world than that in animal world.

- A. In animals such as: Lion and deer - wolf and rabbit - cat and rat - spiders and insects.
- B. In plants such as: Drosera - Dionaea.

- ✓ Some ways of self-defense against predation:

A. Camouflage such as: Fish - frog - chameleon - birds.

B. Mimicry such as: Bees that look like wasps.

#### **2. Symbiosis:**

- A. Mutualism: a food relationship between two different types of living organisms, in which each organism gets benefit from the other.

such as: Nodular bacteria and leguminous plants.

- B. Commensalism: a food relationship between two living organisms where, one of them benefits from the other, while the other neither gets benefit nor is harmed.

such as: Sponge and tiny aquatic living organisms.

- C. Parasitism: a food relationship between two different kinds of living organisms, one benefits from the other (parasite), while the other is harmed (host).



Types of parasitism:

A. External parasitism: lives externally on the host's body.

such as: Mosquitoes Lice Fleas Bugs – Ticks Jawless lamprey

B. Internal parasitism: lives internally inside the host's body.

such as: Bilharzia worms - Ascaris worms - Tape worms - Flaria worms - Liver worm.

Harms of parasitism or parasites:

1. Filaria worms cause elephantiasis disease.

2. Mosquitoes convey malaria disease.

3. Fleas convey plague disease.

4. Bilharzia worms cause bilharziasis disease.

5. Ascaris worms cause anaemia.

**3. Saprophytism:** a food relationship in which saprophytes (decomposers) get their food by decomposing food remains or bodies of dead organisms.

such as: Mushroom fungus bread mold fungus penicillium fungus

## Unit 3 (Environmental balance)

### Lesson 2: Environmental balance (Summary)

**Ecosystem:** It is any natural area including living organisms (as plants and animals) and non living things (as water, soil and air).

#### The components of ecosystem:

1. Living organisms as plants, fungi, algae and animals.
2. Non-living things as air, soil and water.

#### Ecosystem can be classified into:

1. Small as an area of land or a water pond.
2. Large as forest, desert or an ocean.
3. Very large as the universe.

**Environmental balance:** It is the balance among the components of the ecosystem.

The interaction among environmental components is a continuous process.

#### Factors that harm the environmental balance are:

##### 1. Natural changes, leads to:

- a. Disappearance of some organisms.
- b. Appearance of other organisms.
- c. Environmental imbalance

Example: disappearance of dinosaurs (extinction).

##### 2. Man interference, such as:

- a. Cutting down trees.
- b. Burning forests.
- c. Polluting environment.
- d. Eroding the soil.

**Factors that keep the environmental balance are:**

1. Predation: organizes the numbers of prey's. population
2. Saprophytism: help in getting rid of the dead organisms & Recycling the chemical elements found in them.

**Benefits from saprophytic organisms industries such as:**

1. Food industry: such as cheese, bread, yoghurt, vinegar and alcohol
2. Drugs industry: medicines such as antibiotics
3. Leather tanning industry.



# Unit 1 (Energy)

## Lesson 1: light

### **(1) Choose the correct answer**

1 Light propagates in ..... lines

- a. straight
- b. curved
- c. refracted
- d. reflected

2- Light cannot be pass through ..... materials.

- a. transparent
- b. semitransparent
- c. opaque
- d. all of them

3- Light rays that can be seen are called .....

- a. infrared
- b. visible spectrum
- c. ultraviolet
- d. all of them

4- We can see things as a result of ..... of rays.

- a. reflection
- b. refraction
- c. absorption
- d. analyses

5- ..... is from light sources.

- a. sun
- b. candles
- c. electric lamp
- d. all of them

6. The image of object that is formed by camera is .....

- a. inverted
- b. minimized
- c. enlarged
- d. both (a) and (b)

7- The main light source on the Earth's surface is the .....

- a. Sun.
- b. moon.
- c. electric lamp.
- d. lighted candle.

8. The pencil seems broken when it is placed in a glass cup of water due to the . . . . . of light.

- a. reflection
- b. refraction
- c separation
- d. absorption

9- The first scientist who explained the vision is .....

- a. Gilbert.
- b Faraday.
- c. El-Hassan Ibn El-Haytham.
- d. Newton

10- The nearer objects to the light source has the ..... shadow.

- a. smaller
- b. bigger
- c. fainted
- d. no correct answer

11- Light travels in straight lines this principle is the idea of making .....

- a. electric iron.
- b. radio.
- c. electric heater.
- d. camera.

**(2) Complete the following statements:**

1. The image formed by the narrow holes is ..... and .....
2. White light consists of ..... colors, which are called ..... colors.
3. The material in which light can transmit through is called. ....
4. When a light ray passes from a glass rod to air, it.....
5. The spectrum colors start with ..... and end with .....

**(3) Write the scientific term for each of the following:**

1. It is the darkened area which is formed as a result of light falling on an opaque object.
2. A tool is used to separate white light into seven spectrum colors.
3. Materials allow some light to pass through them.
4. Phenomenon formed in the sky after rain and sun still shining.
5. The reflection of light when it falls on a smooth and shiny reflecting surface, where light rays are reflected directly in one direction.

**(4) Give reason for each of the following:**

1. Glass and air are transparent material.
2. The image that formed through narrow holes is inverted and minimized.
3. The pen in a cup of water looks broken.
4. You can see your image in a plane mirror.
5. Aluminum is an opaque material.

**(5) Put (✓) or (X):**

1. Object's image is formed because light travels in curved lines.
2. Air is transparent material.
3. The formed image in the mirror due to light refraction.
4. Light is a form of energy.
5. The moon seems luminous because it reflects the sunlight.

**(6) Correct the underlined words:**

1. Light reflection occurs when light passes through two different transparent media.
2. Formation of images by using narrow holes are minimized and upright.
3. The moon is considered the main source of light.

4. Carton paper is considered a translucent material.
5. Orange light colour lies between green and indigo.

**(7) What happens when:**

1. White light passes through a prism.
2. You look at a picture through a frosted glass.
3. Sun light passes through drops of rain water to air during raining.

**(8) Look at the opposite figures, then answer the following:**



1. The following figure explains ..... phenomenon.
2. Speed of light in air is ..... than speed of light in water.



3. The previous figure explains formation of ..... due to falling of light on ..... object

# Unit 1 (Energy)

## Lesson 2: Seeing coloured objects (Summary)

### **(1) Choose the correct answer.**

1 Mixing green light with red light produces ..... light.

- a. yellow
- b. blue
- c. cyan
- d. black

2- The blue t-shirt seems ..... behind red glass sheet.

- a. blue
- b. red
- c. black
- d. white

3- Black opaque object ..... all light colors.

- a. absorbs
- b. reflects
- c. transmits
- d. all the previous

4- Red, green and blue light are ..... lights.

- a. primary
- b. secondary
- c. complementary
- d. mix

5- Red transparent glass absorbs all light colours, and ..... Its own colour.

- a. absorbs
- b. reflects
- c. transmits.
- d. all the previous

.

6. Which of the following is considered as a secondary colour? .....

- a. Yellow.
- b. Green.
- c. Red.
- d. Blue

7- When you look at red apple through a red glass sheet the apple seems .....

- a. black.
- b. yellow.
- c. red.
- d. white.

8. White opaque object . .... .. all light colors.

- a. absorbs
- b. reflects
- c. transmits.
- d. all the previous

9- Coloured opaque object absorbs all light colours, and ..... Its own colour.

- a. absorbs
- b. reflects
- c. transmits.
- d. all the previous

10- Mixing all the primary coloured lights gives .....

- a. black light.
- b. white light.
- c. red light.
- d. no colour.

11- Mixing yellow light with blue light produces ..... light

- a. black.
- b. white.
- c. cyan.
- d. magenta.

**(2) Complete the following statements:**

1. Mixing ..... and ..... light produces magenta light.
2. The transparent and semi transparent objects have the same colour of ..... light, while the coloured opaque objects have the same colour of ..... light.
3. Yellow, ..... and ..... are known as secondary light colours.
4. On mixing two primary light colors, a ..... light colour is produced.
5. ..... are the coloured lights that can't be produced by mixing any two lights.

**(3) Give reason for each of the following:**

1. Yellow is called secondary coloured light.
2. When light fall on a white paper, it appears white colour.
3. An apple appears red when sunlight falls on it.
4. The red apple seems black when you look at it through a green glass sheet.
5. We wear black clothes in winter.

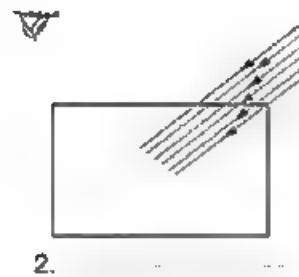
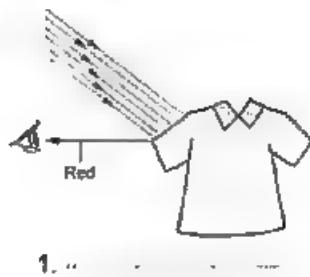
**(4) Put (✓) or (X):**

1. Yellow, magenta and red are primary light colours.
2. When the white light strikes a red rose, it reflects the white colour.
3. The red apple seems red as it reflects the red light colour.
4. The green table reflects all light colours.
5. Yellow banana absorbs the all spectrum colors and transmits the yellow colour only.

**(5) What happens when:**

1. On mixing the blue coloured light with the green coloured light.
2. On mixing the seven colours.
3. Looking at red apple through green glass sheet

**(6) What is the colour of the following bodies:**





# Unit 1 (Energy)

## Lesson 3: Magnetism

### **(1) Choose the correct answer.**

- 1 The material that is attracted to the magnet is called the .....
  - a. magnetic force.
  - b. magnetic compass.
  - c. magnetic material.
  - d. magnetic field.
  
- 2- All the following are non-magnetic materials except
  - a. copper.
  - b. aluminium.
  - c. nickel.
  - d. wood.
  
- 3- ..... is used to locate the main four directions.
  - a. Compass
  - b. Dynamo
  - c. Prism
  - d. Ammeter.
  
- 4- ..... is attracted to the magnet.
  - a. Chalk
  - b. Glass
  - c. Cobalt
  - d. Aluminum
  
- 5- The natural magnet is discovered since ..... ago.
  - a. 2000
  - b. 3500
  - c. 2050
  - d. 3000

**(2) Complete the following statements:**

1. The substances can be divided into ..... and ..... due to their magnetic ability.
2. The like poles ..... each other, whereas the ..... poles attract each other.
3. The magnetic force is most powerful at the ..... of the magnet.
4. Natural magnet is one of the ..... ores that called .....
5. The ..... contains a small light magnet moves freely around a fixed axis.
6. When a magnet is suspended freely, the magnet takes ..... direction.

**(3) Write the scientific term for each of the following:**

1. The pole of the magnet which points to the north direction of the Earth.
2. A tool that is used for locating the four main direction.
3. A magnet made by man and it has many shapes and sizes.
4. The space around the magnet in which the effect of magnetic force appears.
5. The magnetic pole which is attracted to the north pole of another magnet.
6. The space around a magnet in which the magnetic force appears

**(4) Give reason for each of the following:**

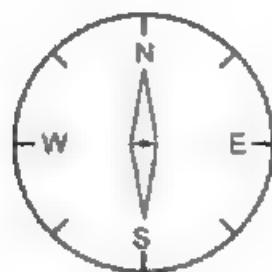
1. Iron is magnetic material.
2. Wood is a non magnetic material.
3. Compass is used to identify the four geographical directions.

**(5) What happens when:**

1. Hanging a bar magnet to move freely.
2. A strong magnet is put close to a piece of wood.
3. Some iron nails are put close to the middle of the magnet.
4. You approach the north pole of a magnet to the south pole of another magnet.

**(6) Look at the opposite figure, then answer the following:**

1. The opposite figure represents .....
2. This devise consists of ..... That spin freely around a fixed axis.
3. It is used to .....



# Unit 1 (Energy)

## Lesson 4: Magnetism and Electricity

### **(1) Choose the correct answer.**

1 The dynamo generates ..... energy from mechanical energy.

- a. thermal
- b. electrical
- c. light
- d. kinetic

2- When the compass is put beside a wire carrying an electric current, .....

- a. no deflection occurs.
- b. the compass needle deflects.
- c. the compass needle will be destroyed.
- d. no correct answer.

3- The magnet which is made by the effect of electricity is called .....

- a. natural magnet.
- b. magnetic substance.
- c. electromagnet.
- d. (b) and (c).

4- The coil of a dynamo is made up of .....

- a. copper.
- b. carbon.
- c. iron.
- d. steel

5- The bar used in electromagnet is made up of .....

- a. aluminum.
- b. wrought iron.
- c. steel.
- d. copper.

6. The magnetic force of the electromagnet will be lost by .....
  - a. increasing the number of coil turns.
  - b. increasing the number of batteries.
  - c. cutting the electric current.
  - d. switching on the key
  
- 7- All the following devices have an electromagnet inside them except .....
  - a. electric bell.
  - b. television
  - c. disc drive.
  - d. refrigerator
  
8. The dynamo is fixed in the bicycle touching the bicycle's .....
  - a. seat
  - b. pedal
  - c. tire
  - d. gear

**(2) Complete the following statements:**

1. electric current has ..... effect.
2. The magnet which is made by the effect of electricity is called.....
3. When an electric current flows through a wire twisted around a wrought iron nail, the nail becomes an .....
4. The electromagnet consists of ..... , ..... and .....
5. The idea of working of the electromagnet is changing of ..... energy to ..... energy.
6. The electromagnet loses its magnetism when .....
7. The magnet has ..... effect.
8. The basic idea of the electric generator is the changing of ..... energy to ..... energy.
9. ..... and ..... are examples on dynamo.
10. A huge electric generator is used in ..... stations.

**(3) Write the scientific term for each of the following:**

1. A set changes kinetic energy into electric energy.
2. A set used to change electric energy into magnetic energy.
3. A device used to measure the electric current intensity.

4. A scientist who discovered that kinetic energy can be changed into electric energy.
5. A device used to detect the magnetic effect of the electric current.

**(4) Give reason for each of the following:**

1. Wrought iron is used for making the electromagnet.
2. The deflection of ammeter's pointer increases by increasing the motion of the coil between the two poles of a magnet.
3. The electromagnet is very important.
4. The huge dynamo is used in electric power stations
5. The magnetic force of the electromagnet increases by increasing the number of batteries.

**(5) Look at the opposite figure, then answer the following:**

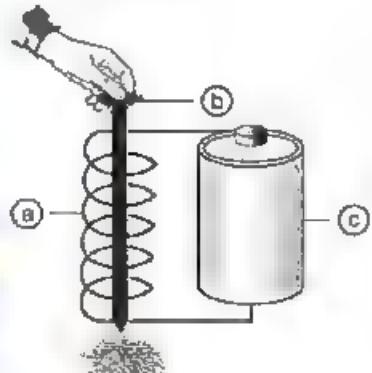
1. The figure represents: .....

2. Label the figure:

1) ..... 2) ..... 3) .....

3. Mention three instruments at home contain this figure:

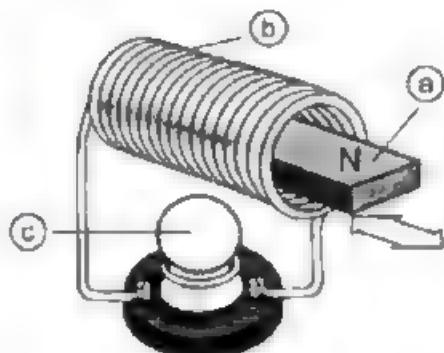
1) ..... 2) ..... 3) .....



1. The figure represents: .....

2. Label the figure:

a) ..... b) ..... c) .....



## Unit 2 (Mixtures)

### Lesson 1: Mixtures

#### **(1) Choose the correct answer.**

1. All the following are examples of mixtures except ..... . . . . .

- a. concrete.
- b. tomato sauce.
- c. sugar.
- d. milk.

2- ..... is used to separate a mixture of oil and water.

- a. Evaporation
- b. Filtration
- c. Separating funnel
- d. Magnetic attraction

3- All the following are pure substances except .....

- a. distilled water.
- b. mineral water.
- c. sugar.
- d. baking soda.

4- All these methods are used to form mixtures except.....

- a. shaking.
- b. grinding.
- c. stirring.
- d. filtration.

5- To separate insoluble matter (sand) from salty solution, we use .....

- a. filtration
- b. evaporation
- c. separating funnel
- d. grinding.

6. To separate iron filings from sand, we must use .....  
a. a magnet.  
b. a separating funnel.  
c. evaporation process.  
d. filtration process.
- 7- To separate sugar from sugary solution, we must use .....  
a. a magnet.  
b. a separating funnel.  
c. evaporation process.  
d. filtration process.

**(2) Complete the following statements:**

1. Solids can be mixed by ..... and .....
2. A substance that consists of one type of identical particles is called .. .. .. .. ..
3. Vinegar and water is ..... mixture, while sand and water is ..... mixture.
4. Air is a mixture of ..... , ..... water vapor and .. .. .. ..
5. We can separate a mixture of paper clips and four by using .. .. .. ..

**(3) Write the scientific term for each of the following:**

1. A substance that consists of more than one type of particles
2. A process that is used to separate a solid material dissolved in water.
3. A mixture of water and some useful minerals such as calcium and magnesium.
4. A mixture that is produced from dissolving carbon dioxide gas in sugar solution
5. Process used to separate the solid materials that are insoluble in water.
6. A device used to separate immiscible liquid mixtures.

**(4) Give reason for each of the following:**

1. Tomato sauce is a mixture.
2. No mixing will happen on adding sand to water.
3. A magnet can be used to separate iron filing from sand.
4. Filtration process is used to separate sand from sugary solution.
5. Both sugar and distilled water are considered pure substances.

**(5) Show how can separate the following:**

1. Salt from salty solution.
2. Chalk powder from water.
3. Oil from oil water mixture
4. Steel paper clips and flour.
5. Sand from water.
6. Sand and iron filings

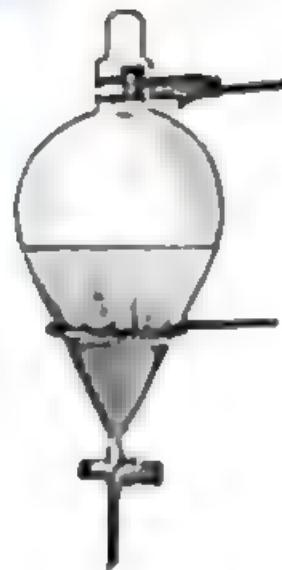
**(6) Examine the figures. then answer:**

1. What Is the tool used in the figure (A) & (B)?
2. What are the substances that can be separated by those tools?

(A)



(B)



## Unit 2 (Mixtures)

### Lesson 2: Solutions

#### **(1) Choose the correct answer.**

1 ..... is considered the most common solvent.

- a. Benzene
- b. Vinegar
- c. Water
- d. Oil

2- Increasing temperature ..... solubility time.

- a. increase
- b. decreases
- c. does not effect
- d. no correct answer

3- The solute in chocolate-milk solution is .....

- a. milk.
- b. chocolate.
- c. water.
- d. all the previous.

4- The material that dissolves to produce solution is called .....

- a. solvent.
- b. solute.
- c. mixture.
- d. Water

5- All these factors affect solubility process except. ....

- a. temperature.
- b. colour of solvent.
- c. stirring.
- d. type of solute.

6. The result from solubility process is called .....

- a. solute.
- b. solvent.
- c. solution.
- d. no correct answer

7- The speed of solubility increases by .....

- a. increasing the amount of solvent.
- b. increasing the amount of solute.
- c. decreasing temperature.
- d. all of them

8. Stirring .... the speed of the solubility process.

- a. decreases
- b. increases.
- c. doesn't affect
- d. no correct answer

9- The solute in the salty solution is .....

- a. sugar.
- b. salt.
- c. water.
- d. sand

10- The solubility process depends on .....

- a. temperature
- b. stirring
- c. type of solute
- d. all of them

11- Dissolving sugar in cold water is ..... in hot water.

- a. faster than
- b. slower than
- c. equal
- d. no correct answer

**(2) Complete the following statements:**

1. The factors Affect solubility process are ..... and .....
2. Increasing ..... increases solubility speed
3. The time of solubility..... by increasing stirring process.
4. Solvent + Solute (solubility process) = .....
5. The solubility speed of solids ..... by grinding.

**(3) Write the scientific term for each of the following:**

1. The liquid substance in which the solute breaks into the most basic particles.
2. The liquid mixture which is composed of a solute and a solvent.
3. The process by which a solute dissolves in a solvent leading to the disappearance of the solute.
4. A common solvent in which thousands of substances dissolve in it.
5. The solid substance that dissolves in a solvent.

**(4) Give reason for each of the following:**

1. Dissolving sugar in hot water is faster than in cold water.
2. In sugary solution, sugar is considered the solute.
3. Water is a common solvent.

**(5) Put (✓) or (X):**

1. The solubility speed of solids increases by cooling.
2. Water, alcohol and benzene are examples for solvents
3. As the temperature of a solvent increases the solubility time decreases.
4. An insoluble substance is a substance that dissolves in a solvent.
5. Solvent is a liquid used to dissolve the solid material in it.

**(6) Correct the underlined words:**

1. By increasing the temperature, the time taken to dissolve solute increases.
2. Increasing solvent amount, decreases the speed of solubility.
3. Solubility speed decreases by rising the temperature.



## Unit 3 (Environmental balance)

### Lesson 1: Food relationships among living organisms

#### **(1) Choose the correct answer.**

1 Fungi are considered as ..... living organisms

- a. parasitic
- b. decomposer
- c. prey
- d. predator

2 A food relationship between fungi and splashed bread.

- a. commensalism
- b. parasitism
- c. saprophytism
- d. mutualism

3- Ascaris worm is .....

- a. host
- b. prey
- c. an internal parasite.
- d. an external parasite

4- From the examples of internal parasites is .....

- a. lice.
- b. fleas.
- c. ticks.
- d. liver worm.

5- The jawless lamprey feeds by sucking blood of its host which is a .....

- a. frog.
- b. fish.
- c insect.
- d. cat.

6 ..... are examples of decomposers.

- a. Broad mold fungi
- b. Rabbits
- c. Plants
- d. lions

7- Green plants are considered as ..... organisms.

- a. decomposer
- b. consumer
- c. producer
- d. no correct

8 In food relationship between a man and a bilharzias worm, the man is a .. ....

- a. predator.
- b. prey.
- c. host.
- d. parasite.

9- The animal that devour other animal is called .. .. .. .. ..

- a. a parasite
- b. a decomposer
- c. a prey
- d. a predator

10- ..... takes place by some living organisms to hide from their enemies.

- a. commensalism
- b. parasitism
- c. camouflage
- d. mutualism

11-The relationship between sponge and tiny aquatic living organisms is .. .. .. ..

- a. parasitism.
- b. predation.
- c. commensalism
- d. camouflage

**(2) Complete the following statements:**

1. Filaria worm is an ..... parasites and causes ..... disease.
2. Predation is less common in ..... world because they are autotrophic organisms
3. Bees which look like wasps undergo ..... phenomenon, while chameleon undergoes ..... phenomenon.
4. The interaction between a cat and a rat is considered as an example of ..... relationship
5. The relationship between nodular bacteria and beans plant is .....
- 6- Some autotrophic plants have to prey insects to get their required elements for making .....

**(3) Write the scientific term for each of the following:**

1. It is a food relationship between two living organisms where both get benefits.
2. A kind of parasite that may live internally inside the hosts body to get their food.
3. A food relationship between two organisms where one organism benefits from the other and the other is not affected.
4. Organisms which get their food by decomposing food remains and dead organisms.
5. The relationship between two living organisms in which one gets benefit and the other gets harmed.
6. The temporary food relationship that ends by devouring the prey or a part of it.
7. Living organisms that depend directly on plants.

**(4) Give only one example for each of the following:**

1. Ways of self-defense against predation.
2. Predators.
3. Insect eater plant.
4. Prey
5. Saprophytic organism.
6. Internal parasite.
7. External parasite.

**(5) Give reason for each of the following:**

1. Drosera is from insectivorous plants.
2. The relationship between nodular bacteria and legumes is considered as mutualism.
3. Butterfly changes its colour

4. Tape worms is a parasite.
5. Saprophytic organisms feed on the bodies of dead organisms.
6. Predation is temporary food relationship.
7. Predation is less common in plant world than in animal world.

**(6) Put (✓) or (X):**

1. Bilharzia worm causes elephantiasis.
2. Some living organisms protect themselves from enemies by changing their colours.
3. The relationship between lion and deer is symbiosis.
4. Spiders use their woven nets for catching insects
5. The relationship between Flaria worm and man is a parasitism relationship.

**(7) Correct the underlined words:**

1. In predation, the harmed organism is known as the predator.
2. The filarial worm causes malaria disease.
3. Parasites get their food by decomposing food remains or dead bodies.
4. The devoured animal is the predator.
5. Mosquitoes causes infection with anaemia.
6. Filaria convey plague disease.

**(8) Mention the kind of relationship between each of the following:**

1. Bread mold fungus and bread.
2. Leguminous plants and bacteria.
3. Bilharzia worm and man.
4. Sponge and tiny aquatic living organisms.
5. Drosera and an insect.

## Unit 3 (Environmental balance)

### Lesson 2: Environmental balance

#### **(1) Choose the correct answer.**

1 All the following are ecosystems except the . . . . .

- a. desert
- b. paper.
- c. sea.
- d. forest.

2 Predation relationship ..... the number of preys.

- a. increases
- b. organizes
- c. decreases
- d. converts

3- Dinosaurs are extinct animals due to .....

- a. pollution.
- b. over hunting.
- c. change in natural condition.
- d. eroding the soil.

4- All the following are non living organisms of an ecosystem except the .....

- a. air
- b. water
- c. Soil
- d. animals

5- Which of the following is a very large ecosystem?

- a. The water pond
- b. The universe
- c. The desert
- d. The ocean

**(2) Complete the following statements:**

1. The ecosystem may be small such as . . . . .
2. Insectivorous plants cannot make . . . . . so they eat insects.
3. Some saprophytic organisms are used in making some types of food such as . . . . and . . . .
4. When the number of preys increase, a . . . . . appears among them to get food.
5. . . . . and . . . . . relationships play an important role in keeping the balance of the ecosystem.

**(3) Write the scientific term for each of the following:**

1. A natural area including living organisms and non- living things.
2. The balance among the component of the ecosystem.
3. An example of extinct animal due to the change of natural conditions in the environment.
4. A relationship that recycle the chemical elements found in the bodies of dead organisms to the environment, to make other living organisms benefit from them.
5. A relationship that organizes the numbers of the preys in populations

**(4) Put (✓) or (X):**

1. Saprophytism causes environmental imbalance.
2. Ecosystem may be large like universe.
3. Interaction among environmental components leads to keep the environmental balance.
4. Predation organizes the numbers of predator's population.
5. Eroding the soil is one of the factors that keeps the environmental balanced.

**(5) What happens when:**

1. Cutting down trees.
2. If there were no predators in the ecosystem.
3. Bacteria disappear completely from the environment.

## **Ministry of education EXAMS**

### **Choose the correct answer between brackets:**

- 1 The banana fruit appears when you look at it from a violet transparent glass sheet.
  - a. red
  - b. yellow
  - c. green
  - d. black
- 2- Which of the following lights are considered as secondary lights? ....
  - a. blue
  - b. yellow
  - c. red
  - d. green
- 3 All the following are factors that affecting in the solubility process except . . . . .
  - a. the kind of solute
  - b. temperature
  - c. texture
  - d. stirring
- 4 Air is a ..... mixture.
  - a. liquid
  - b. gaseous
  - c. solid
  - d. all the previous
- 5 The interaction between a cat and a rat is an example of . . . . .
  - a. saprophytism
  - b. parasitism
  - c. predation
  - d. mutualism
- 6- From extinct organisms due to the changing of natural conditions of environment are .. ....
  - a. insects
  - b. dinosaurs
  - c. fish
  - d. birds

7- Light travels in ..... lines.

- a. broken
- b. curved
- c. zigzag
- d. straight

8- Saprophytes get their food by decomposing the bodies of the ..... organisms.

- a. living
- b. strong
- c. weak
- d. dead

9- Green plants are considered as ..... organisms.

- a. decomposers
- b. consumers
- c. producers
- d. nonliving

10- When white light falls on a red rose, it reflects the ..... light.

- a. white
- b. red
- c. yellow
- d. black

11- From the examples of dark objects .....

- a. air
- b. glass
- c. plastic
- d. wood

### **Complete the following statements:**

1- In salty solution, the salt is called ..... while the water is called .....

2- Mixture can be formed by shaking, ..... or .....

3- ..... is considered as a common solvent because of its ability to dissolve many substances.

4- There are two types of the light reflection ..... and ..... reflection.

5- Like magnetic poles ..... whereas dislike magnetic poles .....

6- ..... is an extinct animal due to the changing of environmental conditions.

7- Dynamo changes ..... energy into ..... energy.

- 8- The material in which light can't transmit through is called ..... while the material in which light can transmit through is called .....
- 9- Salty solution can be separated by .....
- 10- The strength of the magnet concentrated at ..... and vanished at .....
- 11- From the primary lights are ..... green and ..... Light.
- 12- The solution consists of ..... and .....
- 13- The formed image through narrow hole is ..... and .....
- 14- The materials that are attracted to the magnet are called ..... while that are not attracted to the magnet are called .....
- 15- White light falls on the green grass; the grass must absorb ..... except ..... light only.
- 16- The compass consists of ..... freely move.

**Write the scientific term for each of the following:**

- 1- A temporary relationship between two living organisms that ends by devouring the prey or a part of it.
- 2- The materials that get attracted to the magnet.
- 3- The space around the magnet in which the effect of magnetic force appears.
- 4- The change in the direction of light rays when they pass through the separating surface between two transparent media.
- 5- A temporary relationship between two different organisms with a benefit to one and a harm to the other.
- 6- A tool used to locate the main four geographical directions.
- 7- A relationship between two living organisms that benefit from each other.
- 8- A region around the magnet at which the effect of the magnetism appears.
- 9- Living organisms which decompose dead organisms.
- 10- Any natural area that includes living organisms and non-living things.
- 11- Materials that allow light to pass through it.
- 12- A process that requires to complete it, existence of solvent and solute.
- 13- A region on the magnet, where the magnetic force is maximum.

**Put (✓) in front of the correct statement or (✗) in front of the wrong statement of the following:**

- 1- The
- 2- The formed image through narrow holes is inverted and minimized.
- 3- The north pole of the freely suspended magnet points to the south geographical direction.
- 4- Primary light colors are formed by mixing yellow and blue light.
- 5- Natural magnet is a black color stone.
- 6- Dinosaurs are considered the most famous extinct animals because of changing of the natural conditions.
- 7- The oil is separated from water by filtration.
- 8- Magnet free movement always takes a north south direction.
- 9- When mixing the primary lights together, we get the white light.
- 10- The shaking, grinding and stirring are from the methods of mixtures composition.
- 11- Mushroom and bread mold fungus are considered from the examples of analyzed organisms.
- 12- Copper is nonmagnetic material.

**Give reason each of the following:**

- 1- The rainbow appears in the sky after rain fall.
- 2- Time of dissolving sodium chloride differs from that of dissolving sodium carbonate.
- 3- Some living organisms can change their color to simulate the colors of the environment where it lives.
- 4- A banana fruit seems to be yellow.
- 5- Atmospheric air is a mixture.
- 6- Magnet attracts nickel and doesn't attract aluminum.
- 7- The air is transparent material.

**Mention importance or use or function for each of the following:**

- 1- Saprophytic organisms.
- 2- Electromagnet
- 3- Compass.
- 4- Triangular Prism.

**What happen in each case of the following:**

- 1- Mixing red light with green light.
- 2- Passing of electric current in a wire wrapped around a rod of soft iron.

**Correct the underlined words for each of the following:**

- 1- Water and oil mixture can be separated by filter paper.
- 2- Aluminium gets attracted to the magnet.
- 3- When we hold a magnet freely, one of its poles is trying to search for the east direction.
- 4- A separating funnel is used to separate light to seven colours.
- 5- Light is traveled in spiral lines.
- 6- When light passes from air to glass then it reflects.
- 7- Filter paper is used to separate between water and oil mixture.
- 8- In the salty solution, the salt is called solvent.

**Mention the name of equipment (tool) that can be used in each case:**

- 1- Converting of kinetic energy into electric energy.
- 2- Fixing the north and south directions.
- 3- Separating oil and Water mixture.
- 4- Locating the main four geographical directions.
- 5- Separation of a mixture of iron and sand.
- 6- Separation the white light into seven spectrum colours.

**Choose from column (B) what suits in column (A):**

| (A)                  | (B)   |
|----------------------|---|
| a- Mutualism         | 1- A relationship between two different types of living organisms, one benefits from the other and harms it.                  |
| b- Commensalism      | 2- Has different shapes.  |
| c- Parasitism        | 3- The relationship between two different types of living organisms, both of them get benefit from each other.                |
| d- Artificial magnet | 4- A mixture of water and minerals such as calcium and magnesium.   |
| e- Mineral water     | 5- The relationship between two different types of living organisms, one of them benefits from the other and doesn't harm it. |